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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,760	12/14/2001	Young C. Ko	KCC-17,473	8158
35844	7590	09/15/2004	EXAMINER	
PAULEY PETERSEN & ERICKSON 2800 WEST HIGGINS ROAD HOFFMAN ESTATES, IL 60195			YAO, SAMCHUAN CUA	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,760

Applicant(s)

KO ET AL.

Examiner

Sam Chuan C. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,10-28 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,10-28 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 10-28, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al (US 4,892,754) in view of Trokhan et al (US 5,547,747) and Anderson et al (US 6,103,061).

With respect to claims 1, 18, and 28, Itoh et al teaches a process for making an absorbent web, the process comprises:

- a) providing a 1st super-absorbent polymer precursor composition including a monomer (col. 4 line 55 to col. 5 line 43);
- b) providing a 2nd super-absorbent polymer precursor composition including a water soluble radical polymerization initiator (col. 5 lines 44-51);
- c) providing a prefabricated fibrous web including natural cellulosic fibers and/or (polyester fibers or other thermoplastic fibers) (col. 5 line 64 to col. 6 line 5);
- d) separately and sequentially (i.e. two different stages) applying the 1st and 2nd super-absorbent polymer precursor compositions to the fibrous web, wherein the precursor compositions come into contact with each other (col. 6 lines 49-59; col. 6 lines 33-46; example 2); and,

- e) chemically reacting the 1st and 2nd super-absorbent polymer precursor compositions in or on the fibrous web (col. 7 lines 7-29).

In light of the following passage (for example), "... a [1st] method wherein a radical polymerization initiator is applied uniformly in the form of a separate solution from the aqueous monomer to the fibrous substrate, to which the aqueous monomer has previously been applied, by spraying or the like and is decomposed on the fibrous substrate **and** a [2nd] method wherein a radical polymerization initiator is applied uniformly in the form of a separate solution from the aqueous monomer to the fibrous substrate, and then the aqueous monomer is uniformly applied thereto, by spraying, coating or the like" (bold face, emphasis and words added; col. 6 lines 49-59); and, in view that, Itoh et al also teaches "the aqueous monomer is uniformly applied thereto, by spraying" (emphasis added; col. 6 lines 57-59) in the 2nd method, and further teaches applying a 2nd superabsorbent precursor composition in a form of a mist (column 8 lines 41-46), it is taken that, the teachings of Itoh et al envisions sequentially spraying 1st and 2nd superabsorbent precursor compositions to a preformed fibrous web. Itoh et al does not teach using a non-contact printing process for adding a 1st superabsorbent polymer precursor composition to a fibrous web. However, since: a) Trokhan et al teaches the difficulty of spraying a superabsorbent material to a fiber web in a precise pattern and suggest using a gravure-type printing method to precisely apply a superabsorbent material to a fiber web (col. 1 line 21 to col. 2 line 23; col. 7 lines 13-16;

figure 3); and b) it is a common knowledge in the art to apply a coating/impregnating liquid composition to an absorbent fibrous web interchangeably using various pattern printing systems such as a gravure printing, ink jet-printing technique or a spray-printing technique as exemplified in the teachings of Anderson et al (col. 1 lines 7-11; col. 12 line 66 to col. 13 line 38), it would have been obvious in the art to apply a 1st superabsorbent polymer precursor composition to a fibrous web using a patterned spraying system such as an ink jet-printing technique. For the same reason as a 1st superabsorbent polymer precursor composition application (not presently recited in claims 1 and 15), it would have been obvious in the art to apply a 2nd superabsorbent polymer precursor composition to a fibrous web using a patterned printing system such as an ink jet-printing technique. An incentive for one in the art to use the same pattern printing systems (i.e. ink jet-printing technique) would have simply been to obtain the self-evident benefit of simplifying the process (i.e. the convenience of using the same coating devices).

As for the recited characteristics of 1st and 2nd superabsorbent polymer precursor composition of being applied "as spaced apart microdroplets having a diameter of about 10 to about 1000 microns", the recited characteristics are taken to necessarily flow from a process taught by Itoh et al, where a ink jet printing technique is used to add 1st and 2nd superabsorbent polymer precursor compositions. In any event, such would have been obvious in the art, since it is conventional in the art to apply

superabsorbent particles to a fiber web such that, the particles stick to fibers in the web and are spaced apart from one another and since one in the art would have determined, by routine experimentation, an optimal SAP concentration being applied to a fiber web for a desired end-use of a resultant absorbent article; and since it is conventional in the art to apply SAP to an absorbent web, wherein the SAP has the recited diameter.

Note: an amount of SAP which is applied to a fiber web for a given surface area of the fiber web clearly has significant effect on the spacing between applied SAP. Note further that, Itoh et al teaches preferably ranges from 10-1000 parts by weight of monomers per 100 part by weight of a fibrous substrate (col. 7 lines 59-67). For a relatively low amount of monomers which are applied to a fibrous substrate using a jet-ink printing device, the 1st and 2nd superabsorbent polymer precursor compositions are reasonably expected to be spaced apart from each other.

Note: Where ... the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. **Whether the rejection is based on "inherency" under 35 USC § 102, on prima facie obviousness" under 35 USC § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products."** In re Best, 562 F2d 1252, 1255, 195 USPQ 430, 433-4 (CCPA 1977).

With respect to claims 3-6, 10-17, 19-27, and 30-32, these claims would have been obvious in the art for the same reasons set forth in prior office actions.

Response to Arguments

3. Applicant's arguments filed on 08-06-04 have been fully considered but they are not persuasive.

Counsel argues on page 10 full paragraph 2 that *"If two superabsorbent polymer precursor compositions are separately applied as microdroplets, then the only way to form superabsorbent particles of the same size range is to apply the two compositions in precisely the same spaced apart locations. This cannot be accomplished using a random spraying process, but it can be accomplished using a non-contact printing process as recited in Applicants' claims."* Examiner agrees. However, the modified process of Itoh et al applies each of the 1st and 2nd superabsorbent polymer precursor compositions using a jet-ink printing device. This device is in fact identical to a non-contact printing device disclosed in the specification. Therefore, one can reasonably expect that, the application of these two compositions can precisely be applied in the same spaced apart locations to form SAP.

Counsel argues on page 10 that, Examiner asserted that Itoh et al teaches a preferred particle diameter for a sprayed monomer solution is around 30-200 microns (col. 6 lines 35-40), and particle diameter for SAP is around 100-250 microns (example 5), but neither of the cited passages applying separately 1st and 2nd superabsorbent polymer precursor compositions, where *"both as microdroplets having diameter of about 10-1000 microns"* (emphasis in original). First of all, although not expressly

disclosed, one in the art reading the disclosure of Itoh et al would have reasonably expect that a sprayed polymerization initiator must have a diameter which is substantially identical to the diameter of a sprayed monomer, because it would be more convenient to use the same type of spraying means to apply both precursor compositions. More importantly, as noted above, the modified process of Itoh et al applies each of the 1st and 2nd superabsorbent polymer precursor compositions using a jet-ink printing device. Therefore, the recited microdroplets diameter must necessarily flow from the modified process of Itoh et al (i.e. the application of a jet ink printing device to applies the two precursor compositions). Counsel argues, on page 11 last paragraph that, Trokhan et al teaches away from claimed invention in that, Trokhan teaches a contact printing process. While it is true that, the claimed invention requires non-contact printing and Trokhan et al teaches using a contact printing process, it is respectfully submitted that in the context of the collective teachings of the applied references, do not teach away from applying precursor compositions in a non-contact printing operation. As noted above, a) Trokhan et al teaches the difficulty of spraying a superabsorbent material to a fiber web in a precise pattern and suggest using a gravure-type printing method to precisely apply a superabsorbent material to a fiber web (col. 1 line 21 to col. 2 line 23; col. 7 lines 13-16; figure 3); and b) it is a common knowledge in the art to apply a coating/impregnating liquid composition to an absorbent fibrous web interchangeably using various

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pattern printing techniques such as a gravure printing, ink jet-printing technique or a spray-printing technique as exemplified in the teachings of Anderson et al (col. 1 lines 7-11; col. 12 line 66 to col. 13 line 38), it would have been obvious in the art to add a 1st superabsorbent polymer precursor composition to a fibrous web using a patterned spraying system such as an ink jet-printing techniquea) Trokhan et al teaches the difficulty of spraying a superabsorbent material to a fiber web in a precise pattern and suggest using a gravure-type printing method to precisely apply a superabsorbent material to a fiber web (col. 1 line 21 to col. 2 line 23; col. 7 lines 13-16; figure 3); and b) it is a common knowledge in the art to apply a coating/impregnating liquid composition to an absorbent fibrous web interchangeably using various pattern printing techniques such as a gravure printing, ink jet-printing technique or a spray-printing technique as exemplified in the teachings of Anderson et al (col. 1 lines 7-11; col. 12 line 66 to col. 13 line 38), it would have been obvious in the art to apply 1st and 2nd superabsorbent polymer precursor compositions to a fibrous web using a patterned spraying system such as an ink jet-printing technique. Counsel further argues that, Trokhan et al teaches using multiple printing stations while the present invention "*inherently*" requires printing 1st and 2nd precursor compositions at the same location. Even for the sake of argument, Counsel is correct. Counsel's argument is off point. As repeatedly noted, the collective teachings would have suggested to

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one in the art to apply 1st and 2nd precursor compositions using ink-jet printing process.

As for Counsel's argument on 15 regarding the Anderson et al patent, Examiner agrees with Counsel that Anderson et al does not teach using a jet-ink printing device for applying SAP precursor composition to a fibrous substrate. However, it is respectfully submitted that, the Anderson patent as a whole would have suggested to one in the art to use a jet-ink printing device to apply a SAP precursor composition in a preselected pattern to a fibrous substrate. The teachings of the Anderson patent would have suggested to one in the art that a jet ink printing device can effectively be used to apply various liquid compositions (i.e. **not limited to applying ink**) to a substrate at a desired preselected pattern.

As for Counsel's argument on 12 regarding the Anderson et al patent, Examiner agrees with Counsel that Anderson et al does not teach using a jet-ink printing device for applying SAP precursor composition to a fibrous substrate. However, it is respectfully submitted that, the Anderson patent as a whole would have suggested to one in the art to use a jet-ink printing device to apply a SAP precursor composition in a preselected pattern to a fibrous substrate. The teachings of the Anderson patent would have suggested to one in the art that a jet ink printing device can effectively be used to apply various liquid compositions (i.e. **not limited to applying ink**) to a substrate at a desired preselected pattern.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

Scy
09-13-04